

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : David Alexander et al
Application No. : 10/657,144
For : **Interface Device and Method for Interfacing Instruments to
Medical Procedure Simulation Systems**
Filed : September 9, 2003
Examiner : Nikolai Gishnock
Art Unit : 3715

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

This is an Appeal Brief filed under 37 C.F.R. § 41.37 in connection with the final rejection of claims 17, 24, 25, 27, 32, 33, 36, and 38 in the Final Office Action mailed November 24, 2009 (hereinafter the “Final Office Action”). Each of the topics required by 37 C.F.R. § 41.37 is presented herewith and labeled appropriately.

Real Party in Interest

The real party in interest in the present application is the assignee, Immersion Corporation, 801 Fox Lane, San Jose, California 95131 (hereinafter “Appellant”).

Related Appeals and Interferences

Appellant and the Appellant’s legal representative know of no appeals or interferences that will directly affect, will be directly affected by, or have a bearing on the Board’s decision in this appeal.

Status of Claims

Claims 17, 24, 25, 27, 32, 33, 36, and 38 (listed in Appendix A) stand finally rejected and are the substance of this appeal. Claims 1-16, 18-23, 26, 28-31, 34, 35, 37, and 39-40 were cancelled during prosecution. The final rejection of claims 17, 24, 25, 27, 32, 33, 36, and 38 is appealed.

Status of Amendments

Applicant did not seek to further amend the claims in the response to the Final Office Action.

Summary of the Claimed Subject Matter

Of the pending claims, claims 17, 24, and 32 are independent claims. Each of these claims is to an apparatus.

Beginning with claim 17, the first element of claim 17 recites “a mock anatomical site having an orifice, the orifice being configured to receive a peripheral device .” The specification discloses mock anatomical sites having an orifice, such as a nostril or throat.¹ The specification further discloses that the orifice is configured to receive a peripheral device, such as an endoscope.² The specification discloses one embodiment in which the “endoscope is typically inserted into an interface device orifice and manipulated to perform a simulated endoscopic procedure.”³

The next element of claim 17 recites “a resilient hollow member extending between the orifice and a sensing assembly disposed within a housing, the hollow member being configured to guide the peripheral device between the orifice and the sensing assembly.” The specification disclose such a resilient hollow member. For example, the specification discloses one embodiment comprising a “guide tube,” which is traversed by the endoscope.⁴ The specification further discloses that the resilient hollow member can be configured to guide the peripheral device between the orifice and the sensing assembly. For example, the specification discloses

¹ See, e.g., Specification, ¶ 22, 46 59; Figs. 1, 3.

² See, e.g., Specification, ¶ 46.

³ See, e.g., Specification, ¶ 46.

⁴ See, e.g., Specification, ¶ 22, 48 ; Figs. 3, 7.

one embodiment in which a guide tube “includes cross-sectional dimensions greater than the cross-sectional dimensions of navigation tube 49 such that the navigation tube extends through guide tube 34 to interface an instrument capture mechanism 38.”⁵

The third element of claim 17 recites “a bracket coupled to the mock anatomical site and the housing and configured to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket.” The specification discloses such a bracket. For example, the specification discloses at least one such embodiment:

“Angle bracket 116 is attached to lower section or flange 154 of the interface device front wall. The angle bracket includes an interface section 170 that is attached, via pivoting mechanism 112, to the interface device front wall, an anatomical site section 172 that supports head 162, and an angled section 174 that extends between the interface and anatomical site sections at an angle relative to each of those sections. However, the angle bracket sections may be connected at any desired angle. Mock head 162 is affixed to a backing plate 118 via fasteners 126. Plate 118 is attached to pivoting mechanism 114 to enable head 162 to pivot relative to angle bracket 116. Specifically, pivoting mechanism 114 includes a ring 130 rotatably coupled to a fixed, substantially conical retainer 128.”⁶

The fourth element recites “a first retainer coupled to a first end of the bracket proximal to the mock anatomical site.” The previously described embodiment includes such a retainer.⁷

The fifth element recites “a first ring coupled to the mock anatomical site and the first retainer and configured to rotate about the first retainer to allow the mock anatomical site to pivot with respect to the bracket.” The specification discloses such a ring. For example, one disclosed embodiment includes a pivoting mechanism including a first ring: “Specifically, pivoting mechanism 114 includes a ring 130 rotatably coupled to a fixed, substantially conical retainer 128. The ring is coupled to backing plate 118 by fasteners 129 and is retained by conical retainer 128, which is in turn affixed to angle bracket 116 via fasteners 132.”⁸

The sixth element recites “a locking mechanism configured to prevent movement of the mock anatomical site when the locking mechanism is in a locked position.” The specification discloses such a locking mechanism. For example, the specification discloses a “locking

⁵ See, e.g., Specification, ¶ 48.

⁶ See, e.g., Specification, ¶ 60; Fig. 7.

⁷ See, e.g., Specification, ¶ 60; Fig. 7.

⁸ See, e.g., Specification, ¶ 60; Fig. 7.

mechanism (not shown) utilizing pressure and/or frictional forces to prevent rotation via ring 134 may be employed to maintain head 162 at a particular orientation relative to housing 122.”⁹

The seventh element recites “a second retainer coupled to a second end of the bracket proximal to the housing.” The specification discloses such a retainer. For example, the specification discloses that “[p]ivoting mechanism 112 includes a ring 134 that is rotatably coupled to a fixed, substantially annular retainer 144 and attached to angle bracket 116 via fasteners 140. The retainer is attached to the lower section or flange 154 of housing front wall via fasteners 142.”¹⁰

The eighth element of claim 17 recites “a second ring coupled to the housing and the second retainer and configured to rotate about the second retainer to allow the bracket to pivot with respect to the housing.” The specification discloses such a ring. For example, the previously described embodiment discloses such a ring.¹¹

Like claim 17, claim 24 recites an apparatus. The first element of claim 24 recites “a housing.” The specification discloses such a housing. For example, the specification recites that one embodiment comprises “a housing or case 122, a mock anatomical site 162, such as a head, an angle bracket or support 116 for supporting head 162 and pivoting mechanisms 112, 114 for enabling head 162 to pivot relative to housing 122 and support 116, respectively. Housing 122 includes front, rear and side walls that collectively define a housing interior. The interface device front wall is typically formed of overlapping sections, such as an upper section or overhang 152 and a lower section or flange 154.”¹²

The second element of claim 24 recites “a pivotable mock anatomical site having an orifice.” The specification discloses mock anatomical sites having an orifice, such as a nostril or throat.¹³ The specification further discloses that the orifice is configured to receive a peripheral device, such as an endoscope.¹⁴ The specification discloses one embodiment in which the “endoscope is typically inserted into an interface device orifice and manipulated to perform a simulated endoscopic procedure.”¹⁵ The specification further discloses that such a mock

⁹ See, e.g., Specification, ¶ 61.

¹⁰ See, e.g., Specification, ¶ 61; Fig. 7 (note that retainer 144 is distinct from ring 128).

¹¹ See, e.g., Specification, ¶ 61; Fig. 7 (note that ring 134 is distinct from ring 130).

¹² See, e.g., Specification, ¶ 59; Fig. 7.

¹³ See, e.g., Specification, ¶ 22, 46 59; Figs. 1, 3.

¹⁴ See, e.g., Specification, ¶ 46.

¹⁵ See, e.g., Specification, ¶ 46.

anatomical site may be pivotable: interface device 120 includes a housing or case 122, a mock anatomical site 162, such as a head, an angle bracket or support 116 for supporting head 162 and pivoting mechanisms 112, 114 for enabling head 162 to pivot relative to housing 122 and support 116, respectively.”¹⁶

The third element of claim 24 recites “a resilient hollow member extending through a resiliency-providing material and between the orifice and the housing, the hollow member being configured to guide a peripheral device from the orifice into the housing.” The specification discloses such a resilient hollow member. For example, the specification discloses one embodiment comprising a “guide tube,” which is traversed by the endoscope.¹⁷ The specification further discloses that the resilient hollow member can be configured to guide the peripheral device between the orifice and the sensing assembly. For example, the specification discloses one embodiment in which a guide tube “includes cross-sectional dimensions greater than the cross-sectional dimensions of navigation tube 49 such that the navigation tube extends through guide tube 34 to interface an instrument capture mechanism 38.”¹⁸

The fourth element of claim 24 recites “bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket.” The specification discloses such a bracket. For example, the specification discloses at least one such embodiment:

“Angle bracket 116 is attached to lower section or flange 154 of the interface device front wall. The angle bracket includes an interface section 170 that is attached, via pivoting mechanism 112, to the interface device front wall, an anatomical site section 172 that supports head 162, and an angled section 174 that extends between the interface and anatomical site sections at an angle relative to each of those sections. However, the angle bracket sections may be connected at any desired angle. Mock head 162 is affixed to a backing plate 118 via fasteners 126. Plate 118 is attached to pivoting mechanism 114 to enable head 162 to pivot relative to angle bracket 116. Specifically, pivoting mechanism 114 includes a ring 130 rotatably coupled to a fixed, substantially conical retainer 128.”¹⁹

¹⁶ See, e.g., Specification, ¶ 59; Fig. 7.

¹⁷ See, e.g., Specification, ¶ 22, 48 ; Figs. 3, 7.

¹⁸ See, e.g., Specification, ¶ 48.

¹⁹ See, e.g., Specification, ¶ 60; Fig. 7.

The fifth element of claim 24 recites “a retainer coupled to the first end of the bracket and the mock anatomical site.” The previously described embodiment includes such a retainer.²⁰

The sixth element of claim 24 recites “a ring coupled to the retainer and configured to rotate about the retainer to allow the mock anatomical site to rotate with respect to the bracket.” The specification discloses such a ring. For example, one disclosed embodiment includes a pivoting mechanism including a first ring: “Specifically, pivoting mechanism 114 includes a ring 130 rotatably coupled to a fixed, substantially conical retainer 128. The ring is coupled to backing plate 118 by fasteners 129 and is retained by conical retainer 128, which is in turn affixed to angle bracket 116 via fasteners 132.”²¹

The seventh element of claim 24 recites “a locking mechanism configured to prevent movement of the mock anatomical site when the locking mechanism is engaged.” The specification discloses such a locking mechanism. For example, the specification discloses a “locking mechanism (not shown) utilizing pressure and/or frictional forces to prevent rotation via ring 134 may be employed to maintain head 162 at a particular orientation relative to housing 122.”²²

Like claims 17 and 24, claim 32 recites an apparatus. The first element of claim 32 recites “a mock anatomical site having an orifice, the orifice being configured to receive a peripheral device, the mock anatomical site further including a retainer, a first ring disposed proximate to the orifice, the ring being configured to rotate about the retainer to allow the mock anatomical site to pivot in a first direction with respect to a bracket, wherein a first end of the bracket is coupled to the mock anatomical site, the bracket having a second end coupled to a housing having a sensing assembly therein, wherein the bracket is configured to pivot at the second end with respect to the housing to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing.” The specification discloses such a feature.

The specification discloses mock anatomical sites having an orifice, such as a nostril or throat.²³ The specification further discloses that the orifice is configured to receive a peripheral

²⁰ See, e.g., Specification, ¶ 60; Fig. 7.

²¹ See, e.g., Specification, ¶ 60; Fig. 7.

²² See, e.g., Specification, ¶ 61.

²³ See, e.g., Specification, ¶ 22, 46-59; Figs. 1, 3.

device, such as an endoscope.²⁴ The specification discloses one embodiment in which the “endoscope is typically inserted into an interface device orifice and manipulated to perform a simulated endoscopic procedure.”²⁵ Further, the specification discloses an “[a]ngle bracket 116 is attached to lower section or flange 154 of the interface device front wall. The angle bracket includes an interface section 170 that is attached, via pivoting mechanism 112, to the interface device front wall, an anatomical site section 172 that supports head 162, and an angled section 174 that extends between the interface and anatomical site sections at an angle relative to each of those sections. However, the angle bracket sections may be connected at any desired angle. Mock head 162 is affixed to a backing plate 118 via fasteners 126. Plate 118 is attached to pivoting mechanism 114 to enable head 162 to pivot relative to angle bracket 116. Specifically, pivoting mechanism 114 includes a ring 130 rotatably coupled to a fixed, substantially conical retainer 128.”²⁶

The specification also discloses such a ring. For example, one disclosed embodiment includes a pivoting mechanism including a first ring: “Specifically, pivoting mechanism 114 includes a ring 130 rotatably coupled to a fixed, substantially conical retainer 128. The ring is coupled to backing plate 118 by fasteners 129 and is retained by conical retainer 128, which is in turn affixed to angle bracket 116 via fasteners 132.”²⁷

The second element of claim 32 recites “a locking mechanism configured to prevent movement of the mock anatomical site when the locking mechanism is in a locked position, wherein the mock anatomical site is functionally coupled to a pivotable torsion tube.” The specification discloses such a locking mechanism. For example, the specification discloses a “locking mechanism (not shown) utilizing pressure and/or frictional forces to prevent rotation via ring 134 may be employed to maintain head 162 at a particular orientation relative to housing 122.”²⁸ The specification further discloses one embodiment comprising “A flexible torsion tube 148 is disposed at the proximal end of the inner tube while an instrument capture mechanism 138 is disposed at the proximal end of torsion tube 148. A plurality of substantially annular spacers 150 are disposed about the torsion tube between the inner tube and capture mechanism. The

²⁴ See, e.g., Specification, ¶ 46.

²⁵ See, e.g., Specification, ¶ 46.

²⁶ See, e.g., Specification, ¶ 60; Fig. 7.

²⁷ See, e.g., Specification, ¶ 60; Fig. 7.

²⁸ See, e.g., Specification, ¶ 61.

spacers are configured to maintain the torsion tube at the approximate center of outer tube 158, while still permitting the torsion tube to flex within the outer tube. Capture mechanism 138 is substantially similar to the instrument capture mechanism described above. Inner tube 156 is initially positioned within outer tube 158 such that torsion tube 148 flexes to traverse the outer tube curved portion and position the capture mechanism adjacent nostril 136.”²⁹

The third element of claim 32 recites “a hollow member extending between the orifice and the sensing assembly through the retainer, at least a portion of the bracket, and the first ring, the hollow member being configured to guide the peripheral device from the orifice to the sensing assembly.” The specification disclose such a hollow member. For example, the specification discloses one embodiment comprising a “guide tube,” which is traversed by the endoscope.³⁰ The specification further discloses that the hollow member can be configured to guide the peripheral device between the orifice and the sensing assembly. For example, the specification discloses one embodiment in which a guide tube “includes cross-sectional dimensions greater than the cross-sectional dimensions of navigation tube 49 such that the navigation tube extends through guide tube 34 to interface an instrument capture mechanism 38.”³¹

Grounds of Rejection to be Reviewed on Appeal

There are three issues presented for appeal:

- (1) Whether the Examiner erred in rejecting claims 17, 24, 27, 32, and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,907,973 to Hon (“Hon”) in view of U.S. Patent No. 5,820,600 to Carlson et al (“Carlson”) and further in view of U.S. Patent No. 5,613,937 to Garrison et al (“Garrison”);
- (2) Whether the Examiner erred in rejecting claims 27 and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Carlson and Garrison and further in view of U.S. Patent No. 5,480,307 to Lang et al (“Lang”); and

²⁹ See, e.g., Specification, ¶ 63; Fig. 8.

³⁰ See, e.g., Specification, ¶ 22, 48 ; Figs. 3, 7.

³¹ See, e.g., Specification, ¶ 48.

(3) Whether the Examiner erred in rejecting claims 25 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Carlson and Garrison and further in view of U.S. Patent No. 5,951,301 to Younker (“Younker”).

Argument

Issue 1: Whether the Examiner erred in rejecting claims 17, 24, 27, 32, and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Carlson and further in view of Garrison.

Applicant respectfully traverses the rejection of claims 17, 24, 27, 32, and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Carlson and Garrison.

To establish *prima facie* obviousness of a claimed invention under 35 U.S.C. § 103, the Office Action must show, either from the references themselves or in the knowledge generally available to one of ordinary skill in the art, that the cited references disclose or suggest each claimed element.³²

The Examiner fails to state a *prima facie* case of obviousness for two reasons: (1) Garrison fails to disclose the claimed bracket of claims 17, 24, and 32; and (2) Carlson fails to disclose the claimed retainers and rings of claims 17 and 24.

Garrison does not disclose the bracket recited in claims 17, 24, and 32. Further, the Examiner’s rejection is deficient because it fails to address features of the claimed bracket. In the Advisory Action mailed February 16, 2010 (the “Advisory Action”) in response to Applicant’s arguments made in response to the Final Office Action, the Examiner maintains his rejections and states that Garrison discloses a bracket as recited in claim 17 because Garrison discloses a trocar that uses a clamp and collar assembly, which corresponding to the claimed bracket.³³ The Examiner argues:

In the instant case, a trocar such as Carlson's, having a pivot tower, would merely be used with an obturator bracket such as Garrison's, to allow flexibility and realism as is found in actual surgical environments for the mock anatomical site of Hon. This is due to the obvious rationale to mimic a modern, realistic surgery in training as best as possible. One of ordinary skill in the surgical arts would

³² See *Graham v. John Deere Co.*, 383 U.S. 1 (1966); See also *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007).

³³ Advisory Action at 2.

appreciate that the structure of real tools of endoscopic surgery would be compatible with a surgery simulator such as Hon's, because Hon's mannequin simulates the human anatomy that the implements of Carlson and Garrison are configured for.³⁴

However, this argument is flawed because the clamp and collar assembly are not "configured to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing" as recited in claim 17. The Examiner's argument that the clamp and collar allows pivoting of the mock anatomical site with respect the housing is deficient and misplaced. First, the Examiner's rejection simply states that the "clamp and collar assembly is understood to be an adjustable bracket."³⁵ No explanation is given as to how the clamp and collar assembly would be used to couple the mock anatomical site and the housing. Further, the claims recite a bracket that is coupled to the mock anatomical site and the housing in which is disposed a sensing assembly and that allows the mock anatomical site to be moveable with respect to the housing.³⁶ However, the clamp and collar disclosed in Garrison are not disclosed to allow a mock anatomical site and a housing to move with respect to each other. Rather, the clamp and collar is disclosed to allow an inserted shaft to be moved and locked into place. This does not disclose a coupling allowing the mock anatomical site and the housing to be moveable with respect to each other. Thus Hon in view of Carlson and Garrison does not disclose or suggest "a bracket coupled to the mock anatomical site and the housing and configured to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket." Applicant respectfully requests the Board reverse the Examiner's rejection of claim 17.

Similar to claim 17, claim 24 recites "a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket." Claim 24 is patentable over Hon in view of Garrison and Carlson for at least the same reasons as

³⁴ Id.

³⁵ Final Office Action at 3.

³⁶ "a bracket coupled to the mock anatomical site and the housing and configured to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing" and "a sensing assembly disposed within a housing." (Claim 17).

claim 17. Applicant respectfully requests the Board reverse the Examiner's rejection of claim 24.

Similar to claims 17 and 24, claim 32 recites "a first end of the bracket is coupled to the mock anatomical site, the bracket having a second end coupled to a housing having a sensing assembly therein, wherein the bracket is configured to pivot at the second end with respect to the housing to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing; ... [and] a hollow member extending ... through ... at least a portion of the bracket." Claim 32 is patentable over Hon in view of Garrison and Carlson for at least the same reasons as claims 17 and 24. Applicant respectfully requests the Board reverse the Examiner's rejection of claim 32.

Further, with respect to claims 17 and 24, Hon in view of Carlson and Garrison does not disclose the claimed first retainer and first ring, and with respect to claim 17, Carlson does not disclose the claimed second retainer and second ring.

The Examiner cites to an adjustable trocar valve as disclosing each of these claimed components. However, the Examiner does not identify any structure corresponding to the second retainer or second ring recited in claim 17.³⁷ Further, the Examiner neglects the language of claims 17 and 24, which recite the physical relationships between the bracket and the claimed retainers and rings.

The trocar valve of Carlson includes a number of components, however, there is nothing in Carlson to indicate that these various valve components may be coupled in any way to the alleged adjustable bracket of Garrison, nor does the Examiner suggest how such a coupling might be accomplished. The Examiner identifies internal components of the trocar valve as corresponding to the first retainer and first ring: the pivot tower 40 and the dilator ring 50. No component is identified as the second retainer and second ring. However, even assuming the Examiner is correct regarding the alleged first retainer and first ring, there is nothing to teach one of skill in the art how the Carlson valve could be combined with the Garrison clamp and collar to create the claimed apparatus. The Carlson valve is disclosed as being a single, closed structure for allowing instruments of various sizes to be inserted through a trocar while maintaining a fluid seal.³⁸ Thus, coupling the valve's internal components to the clamp and

³⁷ Final Office Action at 2-6.

³⁸ Carlson, col. 3, lines 12-16.

collar from Garrison would require disassembly of the Carlson valve and the Garrison clamp and collar, and designing a new clamp/collar/valve assembly (capable of maintaining the fluid seal) not disclosed by either Carlson or Garrison to meet the claim limitations.

Further, this new assembly would need to provide the ability of the housing of Hon be moveable with respect to the mock anatomical site of Hon, which is likewise not disclosed by any of the references. The deficiencies of Garrison are described above. With respect to Carlson, the Examiner argues that the first ring is configured to rotate about the first receiver – i.e. the dilator ring can rotate about the pivot tower. However, the Examiner does not attempt to explain how rotating the dilator ring about the pivot tower would disclose allowing “the mock anatomical site to pivot with respect to the bracket” as recited in claim 17 or allowing “the mock anatomical site to rotate with respect to the bracket” as recited in claim 24. Additionally, because the Examiner does not identify any structure in Carlson as corresponding to the second retainer or second ring, the Examiner similarly does not explain how the second ring allows “the bracket to pivot with respect to the housing” as recited in claim 17.

As such, the combination of Hon, Garrison and Carlson does not disclose or suggest the first retainer and first ring as recited in claims 17 and 24, or the second retainer and second ring as recited in claim 17. Therefore, Applicant respectfully requests the Board reverse the Examiner’s rejection of claims 17 and 24.

Because claims 27 and 36 depend from and further limit one of claims 24 or 32, claims 27 and 36 are each patentable over Hon in view of Garrison and Carlson for at least the same reasons as claims 24 and 32. Applicant respectfully requests the Board reverse the Examiner’s rejection of claims 27 and 36.

Issue 2: Whether the Examiner erred in rejecting claims 27 and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Carlson and Garrison and further in view of Lang.

Applicant respectfully traverses the rejection of claims 27 and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Garrison, Carlson, and Lang.

Because the combination of Hon in view of Garrison, Carlson, and Lang does not disclose or suggest “a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical

site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket” as recited in claim 24, from which claim 27 depends, claim 27 is patentable over the combined references.

As discussed above, Hon in view of Garrison and Carlson does not disclose “a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket.” Lang does not cure this deficiency for at least the same reasons given with respect to Garrison above. Further, Lang discloses a mock human head attached to a mock torso for training dental procedures, such as orthodontic procedures. While the human head in Lang may be pivoted, Lang does not disclose or suggest “a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket” at least because Lang does not disclose that a hollow member can be extended through a portion of the bracket, nor does it disclose how such a feature may be added to the disclosed ball-and-socket joint. Further, the combination of Lang with Hon, Garrison, and Carlson does not suggest such a feature. Therefore, claim 27 is patentable over Hon, Garrison, Carlson, and Lang. Applicant respectfully requests the Board reverse the Examiner’s rejection of claim 27.

Similar to claim 27, claim 32, from which claim 36 depends, recites “a first end of the bracket is coupled to the mock anatomical site, the bracket having a second end coupled to a housing having a sensing assembly therein, wherein the bracket is configured to pivot at the second end with respect to the housing to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing; ... [and] a hollow member extending ... through ... at least a portion of the bracket.” Claim 32 is patentable over the combined references. Applicant respectfully requests the Board reverse the Examiner’s rejection of claim 36.

Issue 3: Whether the Examiner erred in rejecting claims 25 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Carlson and Garrison and further in view of Younker.

Applicant respectfully traverses the rejection of claims 25 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hon in view of Garrison, Carlson, and Younker.

Because the combination of Hon in view of Garrison, Carlson, and Younker does not disclose or suggest “a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket” as recited in claim 24, from which claim 25 depends, claim 25 is patentable over the combined references.

As discussed above, Hon in view of Garrison and Carlson does not disclose or suggest “a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket.” Younker does not cure this deficiency. Younker discloses a simulator for endoscopic training, however, it does not disclose or suggest “a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket.” As such, claim 25 is patentable over the combined references. Applicant respectfully requests the Examiner withdraw the rejection of claim 25.

Similar to claim 25, claim 32, from which claim 33 depends, recites “a first end of the bracket is coupled to the mock anatomical site, the bracket having a second end coupled to a housing having a sensing assembly therein, wherein the bracket is configured to pivot at the second end with respect to the housing to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing; ... [and] a hollow member extending ... through ... at least a portion of the bracket.” Claim 33 is patentable over the combined references for at least the same reasons as claim 25. Applicant respectfully requests the Board reverse the Examiner’s rejection of claim 33.

Conclusion

In view of the foregoing, Applicant respectfully requests the Board reverse the Examiner on all grounds.

Respectfully submitted,

Date: June 23, 2010

A handwritten signature in black ink, appearing to read 'Carl Sanders', written over a horizontal line.

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Appendix A – Claims

17. An apparatus comprising:

a mock anatomical site having an orifice, the orifice being configured to receive a peripheral device;

a resilient hollow member extending between the orifice and a sensing assembly disposed within a housing, the hollow member being configured to guide the peripheral device between the orifice and the sensing assembly;

a bracket coupled to the mock anatomical site and the housing and configured to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket;

a first retainer coupled to a first end of the bracket proximal to the mock anatomical site;

a first ring coupled to the mock anatomical site and the first retainer and configured to rotate about the first retainer to allow the mock anatomical site to pivot with respect to the bracket;

a locking mechanism configured to prevent movement of the mock anatomical site when the locking mechanism is in a locked position;

a second retainer coupled to a second end of the bracket proximal to the housing; and

a second ring coupled to the housing and the second retainer and configured to rotate about the second retainer to allow the bracket to pivot with respect to the housing.

24. An apparatus, comprising:

a housing;

a pivotable mock anatomical site having an orifice;

a resilient hollow member extending through a resiliency-providing material and between the orifice and the housing, the hollow member being configured to guide a peripheral device from the orifice into the housing;

a bracket coupled to the mock anatomical site at a first end and the housing at a second end, the bracket configured to allow positioning adjustment of the mock anatomical site in a

plurality of degrees of freedom with respect to the housing, wherein at least a portion of the hollow member extends through a portion of the bracket;

a retainer coupled to the first end of the bracket and the mock anatomical site;

a ring coupled to the retainer and configured to rotate about the retainer to allow the mock anatomical site to rotate with respect to the bracket; and

a locking mechanism configured to prevent movement of the mock anatomical site when the locking mechanism is engaged.

25. The apparatus of claim 24, wherein the resiliency-providing material is a block of foam.

27. The apparatus of claim 24, wherein the mock anatomical site is a simulated patient head.

32. An apparatus for simulation, comprising:

a mock anatomical site having an orifice, the orifice being configured to receive a peripheral device, the mock anatomical site further including a retainer, a first ring disposed proximate to the orifice, the ring being configured to rotate about the retainer to allow the mock anatomical site to pivot in a first direction with respect to a bracket, wherein a first end of the bracket is coupled to the mock anatomical site, the bracket having a second end coupled to a housing having a sensing assembly therein, wherein the bracket is configured to pivot at the second end with respect to the housing to allow the mock anatomical site to be moveable in a plurality of degrees of freedom with respect to the housing;

a locking mechanism configured to prevent movement of the mock anatomical site when the locking mechanism is in a locked position, wherein the mock anatomical site is functionally coupled to a pivotable torsion tube; and

a hollow member extending between the orifice and the sensing assembly through the retainer, at least a portion of the bracket, and the first ring, the hollow member being configured to guide the peripheral device from the orifice to the sensing assembly.

33. The apparatus of claim 32, wherein the hollow member is made of a resiliency-providing material.

36. The apparatus of claim 32, wherein the mock anatomical site is a mock face, and the housing is a mock torso.
38. The apparatus of claim 17, wherein the peripheral device is a guidewire.

Appendix B – Evidence

None.

Appendix C – Related Proceedings

None.